

In the Claims:

1.-16. (Canceled)

17. (Currently Amended) A method of fabricating a capacitor of a semiconductor device, the method comprising:

forming a capacitor lower electrode on a semiconductor substrate;

forming a dielectric layer on the lower electrode; and

sequentially stacking a metallic layer and a polySi_{1-x}Ge_x layer on the dielectric layer to form an upper electrode comprising the metallic layer and the polySi_{1-x}Ge_x layer, wherein the polySi_{1-x}Ge_x layer is formed at about 550°C or less..

18. (Previously Presented) The method of Claim 17 wherein the polySi_{1-x}Ge_x layer comprises a doped polySi_{1-x}Ge_x layer.

19. (Original) The method of Claim 18, wherein the doped polySi_{1-x}Ge_x layer is formed by doping a polySi_{1-x}Ge_x layer with P or As.

20. (Original) The method of Claim 18, wherein the doped polySi_{1-x}Ge_x layer is formed by doping a polySi_{1-x}Ge_x layer with B.

21. (Original) The method of Claim 18, wherein the doped polySi_{1-x}Ge_x layer is formed by depositing a polySi_{1-x}Ge_x layer while simultaneously doping impurities.

22. (Original) The method of Claim 18, wherein the doped polySi_{1-x}Ge_x layer is deposited and simultaneously activated.

23. (Previously Presented) The method of Claim 22, wherein the doped polySi_{1-x}Ge_x is deposited and simultaneously activated between about 350°C and about 550°C.

24. (Original) The method of Claim 18, wherein the doped polySi_{1-x}Ge_x layer is deposited and then activation and thermal treatment is performed.

25. (Original) The method of Claim 24, wherein activation and thermal treatment is performed between about 400°C and about 550°C.

26. (Original) The method of Claim 17, wherein the metallic layer of the upper electrode comprises TiN, WN, TaN, Cu, W, Al, noble metals, oxide of the noble metals, and/or combinations thereof.

27. (Previously Presented) The method of Claim 18, wherein the doped polySi_{1-x}Ge_x layer is formed using low pressure chemical vapor deposition (LP CVD) using furnace type equipment, single wafer type equipment, and/or mini-batch equipment.

28. (Original) The method of Claim 17, wherein the lower electrode comprises a metallic layer.

29. (Original) A method of fabricating a capacitor of a semiconductor device, the method comprising:
forming a capacitor lower electrode on a semiconductor substrate;
forming a dielectric layer on the lower electrode; and
forming an Si_{1-x}Ge_x layer on the dielectric layer at about 550°C or less.

30. (Original) A method according to Claim 29, further comprising:
thermally treating the Si_{1-x}Ge_x layer at about 550°C or less.

31. (Previously Presented) A method according to Claim 29 wherein the following is performed between forming a dielectric layer and forming an Si_{1-x}Ge_x layer:

forming a metallic layer on the dielectric layer; and

wherein forming an $\text{Si}_{1-x}\text{Ge}_x$ layer comprises forming an $\text{Si}_{1-x}\text{Ge}_x$ layer on the metallic layer at about 550°C or less.

32. (Previously Presented) A method according to Claim 29 wherein the $\text{Si}_{1-x}\text{Ge}_x$ layer comprises a poly $\text{Si}_{1-x}\text{Ge}_x$ layer.

33. (Canceled)

34. (Previously Presented) A method according to Claim 29 wherein the lower electrode comprises a metallic layer.